



Missouri Department of Natural Resources

Total Maximum Daily Load Information Sheet

Little Muddy Creek and Tributary to Little Muddy Creek

Waterbody Segment at a Glance:

County: Pettis
Nearby Cities: Sedalia
Length of impairment

- **Little Muddy Creek:** 0.7 mile
- **Tributary:** 0.4 mile

Pollutant: Temperature
Source: Tysons Foods Inc.

TMDL Priority Ranking: High



Description of the Problem

Beneficial uses of Little Muddy Creek and Tributary

- Livestock and Wildlife Watering
- Protection of Warm Water Aquatic Life and Human Health-Fish Consumption.

Use that is impaired

- Protection of Warm Water Aquatic Life

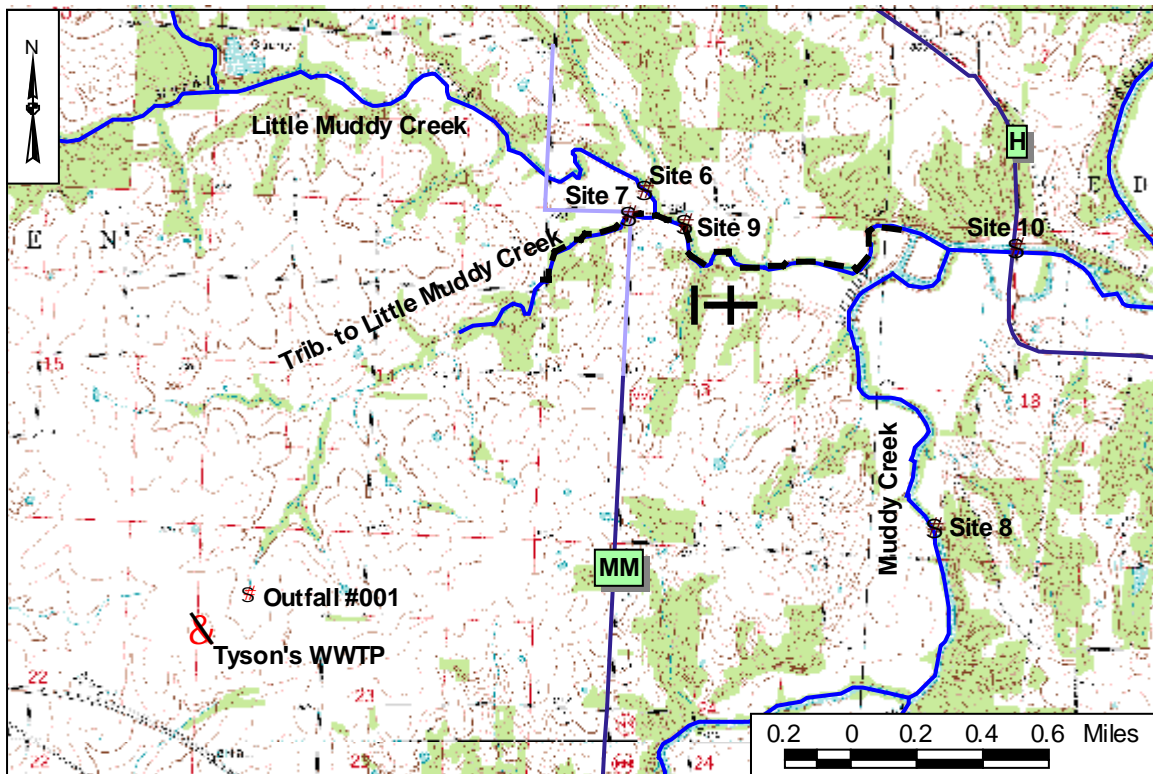
Standards that apply

- Missouri's Water Quality Standards 10 CSR20-7.031(D)(1) state that "Water contaminant sources or physical alteration of the stream shall not raise or lower the water temperature more than 5° F [2.8° C], or contribute to a stream temperature in excess of 90° F [32° C]."

Excess temperature in a water body is considered a pollutant that is harmful to the aquatic life that inhabits the stream. Tyson Foods Inc., a poultry-processing plant, discharges treated wastewater into a tributary to Little Muddy Creek. The Missouri Department of Conservation conducted a water quality study of Muddy Creek and selected tributaries between April 1997 and April 1998. The data from the grab samples collected for this study shows that water temperatures in the tributary exceeded those in Little Muddy Creek *upstream* of the tributary by more than 5° F on 41 of 55 sampling dates (data attached is recorded in °C). This means that in 74 percent of the samples, state standards for water temperature were exceeded. Another portion of the study included collection of temperature data every thirty minutes using a continuous monitoring sampler. Using this method, 4042 out of 6890 samples or 58.7 percent exceeded state water quality standards.

In the TMDL study, natural heating of the stream by sunlight was ruled out as the cause of the temperature variations, as were any other background influences. The TMDL recommends that temperature limits be added to Tyson's discharge permit, along with specified in-stream monitoring points (locations where temperature data is to be collected on a daily basis). The permit is currently in the process of being reissued with the temperature limits and monitoring requirements. The U.S. Environmental Protection Agency approved this TMDL January 12, 2001. A map of the area and a graph of the grab sample data may be found below.

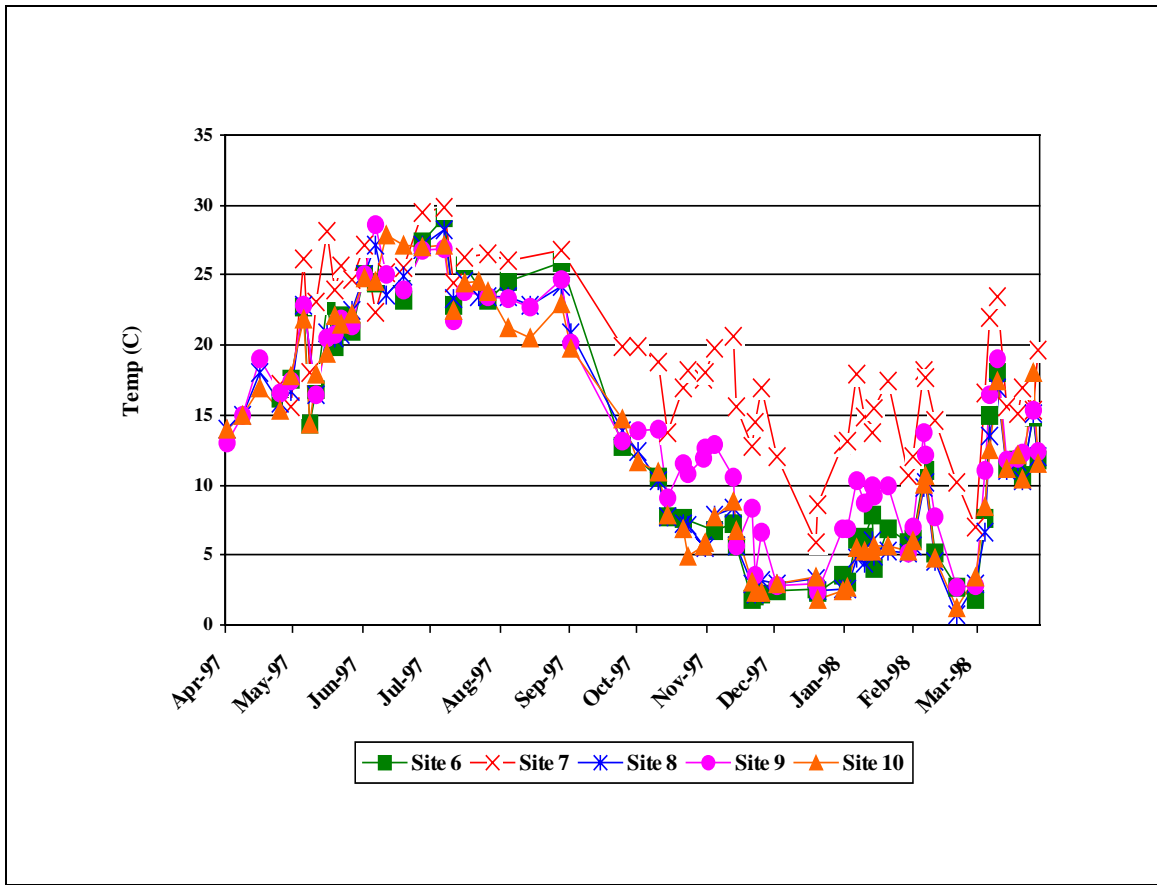
Map of Little Muddy Creek and Tributary to Little Muddy Creek with Sampling Sites Identified



----- Impaired segment

→ Direction of flow

Grab sample temperatures in Muddy Creek, Little Muddy Creek, and the tributary to Little Muddy Creek, April 1997-March 1998



Source: Missouri Department of Natural Resources.

For more information call or write:
Missouri Department of Natural Resources
Water Pollution Control Program
P.O. Box 176, Jefferson City, MO 65102-0176
1-800-361-4827 or (573) 751-1300 office
(573) 751-9396 fax
Program Home Page: www.dnr.state.mo.us/wpscd/wpcp/index.html